



PATENT

#5
C. Queen
3/27/01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : March 19, 2001
Chapman : Group Art Unit: 1773
Serial No. 09/350,060 : Examiner: P. Thibodeau
Filed: July 8, 1999 : Docket No.: W9443-02
For: Ink-Receptive Coatings and Recording
Medium Prepared Therefrom

REQUEST FOR RECONSIDERATION

Honorable Director of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicant respectfully requests reconsideration of the rejections stated the September 19, 2000, Office Action in the above-identified patent application. The period for responding thereto has been extended by three (3) months to March 19, 2001, in view of the enclosed request for Extension of Time and the authorization therein to charge to Deposit Account 07-1770 the appropriate fee.

The pending claims in the above application have been rejected under 35 U.S.C. §103 as being unpatentable over several combinations of references. Applicant respectfully requests reconsideration and withdrawal of each of those rejections for reasons as described further below.

As a brief background, Applicant's invention is directed towards a high solids ink-receptive formulation which provides coated recording medium having optimum ink-receptive properties. It is desirable to improve ink-receptive properties by incorporating porous particles at relatively high solids contents. However, it is difficult to prepare such formulations due to the fact that as the amount of porous particles increases, the more difficult it is to disperse the

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particles. High amounts of porous solids generally result in relatively viscous dispersions which are more difficult to coat and thereby more difficult to utilize in automated equipment. Applicant believes he has discovered a composition which addresses these problems.

Specifically, Applicant discovered that by employing a non-ionic latex binder, one is able to prepare a coating composition comprising at least 20% by weight solids of porous inorganic oxides having pore volumes in the range of 0.6 to 3.0 cc/g. The inorganic oxides of the inventive composition possess a cationic charge to improve the ink-receptive nature of the resulting coating. An additional water soluble polymer, e.g., polyvinylalcohol is also included. The overall coating composition has a Brookfield viscosity of 5,000 centipoise or less. The nonionic polymer preferably has a core/shell structure and more preferably is a polyvinyl acetate homopolymer. Applicant also employs optional dye mordant materials such as cationic polymers. It is submitted that the prior art relied upon in the following rejections do not disclose nor suggest this composition.

For example, claims 1-3, 5-8, 13-20, 23, 24 and 27-30 are rejected under §103 as being unpatentable over Stokes et al. in view of Alexander et al. It is stated that mention of polyvinyl acetate by Stokes on column 3, lines 14-25, of his patent discloses a polymer which is equivalent to Applicant's non-ionic latex polymer. It is correct in that Applicant's preferred non-ionic latex polymer is a vinyl acetate polymer. However, Applicant's latex is a *non-ionic* polymer and the mere mention of a polyvinyl acetate does not expressly refer to such polymers. Indeed, it is known that polyvinyl acetates can be anionic. See enclosed brochure from Rohm & Haas. Stokes et al. is silent as to the charge of the vinyl acetate polymer described therein.

It is also stated that one of ordinary skill in the art would be motivated to include the cationic silicas of Alexander et al. with the formula disclosed by Stokes et al. It is submitted, however, that the Examiner does not refer to any text in the prior art which motivates such an inclusion. Stokes et al. does not mention the use of cationic pigment in their formulation. Likewise, Alexander is silent as to including his cationic materials in ink-receptive coatings. Accordingly, there is no basis for stating there is a motivation to combine the teachings of these two patents.

It is also submitted the cationic silicas disclosed by Alexander are *colloidal* silica, and that it is known to those skilled in the art that such silicas are generally "non-porous." See enclosed copy of page 328 from Iler's "The Chemistry of Silica." Therefore, even if one was to combine the cationic silicas of Alexander with the coating formulation of Stokes, one would not arrive at Applicant's invention. The resulting material would not contain a non-ionic latex, nor would it contain inorganic oxides having the porosity mentioned above. Accordingly, withdrawal of the rejection based on Stokes et al. and Alexander et al. is requested.

Claims 10-12, 21, 22, 25, and 26 are also rejected over the combination of Stokes et al. and Alexander et al. further in view of Williams et al. Williams et al. discloses a cationic polymer. It is submitted that even if Williams et al. and the polymers disclosed therein are included in Stokes et al.'s formula, one has not arrived at Applicant's invention. For the very reasons stated above, withdrawal of this rejection is also requested.

Claims 1-3, 5-10, and 13-30 are rejected under § 103 as unpatentable over Abe et al. It is submitted that Abe et al. also discloses non-porous colloidal silica and furthermore does not mention nor suggest using non-ionic latex. Indeed, by employing colloidal silica Abe et al. would not face the same viscosity issues faced by Applicant who is using porous inorganic oxide materials. Therefore Abe would not be motivated to search for the solution discovered by Applicant. Withdrawal of the rejection based on Abe et al. is requested.

Claims 1-3, 8-16, and 20-29 are rejected under § 103 as being unpatentable over Koch et al. Applicant has noted this reference in the background section of his application. See page 5, lines 13-24. As stated therein, the pigments disclosed in that reference include calcium carbonate and fumed silicas. These pigments have limited porosity and it is envisioned that the coating's overall ink capacity would be limited when using these pigments. Therefore, Koch et al. would not appreciate the problem addressed by Applicant as Koch et al. were not employing highly porous pigments which are desirable for improving the ink-receptive properties of an ink-receptive coating formulation. Withdrawal of this rejection is requested.

Claim 4 is rejected under several references. The above-mentioned references of Stokes et al. and Alexander et al., Abe et al., and Koch et al. are combined with Vassiliades et al. to reject to claim 4 under §103. Claim 4 recites a preferred embodiment of Applicant's invention in which the non-ionic latex polymer comprises a polyvinyl acetate comprising a core and a shell, wherein the shell comprises polyvinyl alcohol. However, it is respectfully submitted that Vassiliades et al. does not disclose or suggest Applicant's invention. While Vassiliades et al. discloses making grafted polymeric microcapsular materials having a solid polymeric shell and a solid polymeric core, Vassiliades et al. does not disclose nor suggest that the materials are non-ionic. Indeed, not all core/shell polymer materials are non-ionic. Applicant has included in his examples other core/shell polymers which are anionic or cationic, and Applicant has shown the selection of a non-ionic material unexpectedly provides for relatively low viscosity, high solids and optimum performing ink-receptive coating. Accordingly, withdrawal of the three rejections based on the Vassiliades et al. reference is respectfully requested.

In view of the above, Applicant submits that his claims are in condition for allowance and request notification to that effect in the form of a Notice of Allowability.

Respectfully submitted,



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